

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C.20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 12 May 2000 (12.05.00)	
International application No. PCT/GB99/03290	Applicant's or agent's file reference REPO5851WO
International filing date (day/month/year) 05 October 1999 (05.10.99)	Priority date (day/month/year) 06 October 1998 (06.10.98)
Applicant ANGUS, Katherine, Louise et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

10 April 2000 (10.04.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
 34, chemin des Colombettes
 1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Juan Cruz

Telephone No.: (41-22) 338.83.38

W/V

PATENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference REP05851W0	FOR FURTHER ACTION <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. PCT/GB 99/ 03290	International filing date (day/month/year) 05/10/1999	(Earliest) Priority Date (day/month/year) 06/10/1998
Applicant BIOPROCESSING LTD. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (see Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

/GB 99/03290

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 B01J20/28 B01J20/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 B01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	W0 91 17830 A (BIO ISOLATES LTD) 28 November 1991 (1991-11-28) cited in the application	1,4,5,9, 10
Y	page 3, line 13 - line 15; claims 1,9,10	6,7,11
Y	W0 94 11103 A (WILLIAMS) 26 May 1994 (1994-05-26) page 2, line 7 - line 13; claims 1,3,5,7,8 page 3, line 6 - line 14	6,7,11
X	EP 0 451 706 A (SAKAI ENGINEERING) 16 October 1991 (1991-10-16) page 4, line 17 page 5, line 9 - line 11	1,4,5
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

26 November 1999

Date of mailing of the international search report

08/12/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax (+31-70) 340-3016

Authorized officer

Hilgenga, K

INTERNATIONAL SEARCH REPORT

International Application No

GB 99/03290

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 154 676 A (D.T. JONES) 15 May 1979 (1979-05-15) column 2, line 44 column 2, line 25 column 4, line 24 - line 27	1,4-7, 9-11
X	US 4 332 916 A (B.P. THILL) 1 June 1982 (1982-06-01) column 1, line 56 - line 60; claim 1	1,2,4,5, 10
X	GB 1 226 448 A (TASMAN VACCINE LAB.) 31 March 1971 (1971-03-31) cited in the application page 1, line 82 page 3; claim 1; example 6	1,4,5,10
X	US 5 162 404 A (RAINER NORMAN B) 10 November 1992 (1992-11-10) claim 1	1,4,5,8
A	DATABASE WPI Section Ch, Week 199029 Derwent Publications Ltd., London, GB; Class A96, AN 1990-220679 XP002123920 & JP 02 149341 A (KANEGAFUCHI CHEM KK), 7 June 1990 (1990-06-07) abstract	1,4,5
A	DATABASE WPI Section Ch, Week 198646 Derwent Publications Ltd., London, GB; Class A96, AN 1986-303144 XP002123921 & JP 61 226059 A (AGENCY OF IND SCI & TECHNOLOGY), 7 October 1986 (1986-10-07)	1,4,5
A	GB 914 421 A (SPONCEL LIMITED) page 2, line 7 - line 8	1,4-7
A	EP 0 837 091 A (YAMAGUCHI) 22 April 1998 (1998-04-22) claim 1	1-5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

GB 99/03290

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9117830	A	28-11-1991	DE 69113266 D DE 69113266 T DK 530258 T EP 0530258 A ES 2080316 T US 5492723 A	26-10-1995 24-10-1996 05-02-1996 10-03-1993 01-02-1996 20-02-1996
WO 9411103	A	26-05-1994	AU 5427394 A EP 0621802 A	08-06-1994 02-11-1994
EP 451706	A	16-10-1991	JP 3290443 A AT 101813 T CA 2039843 A,C DE 69101225 D DE 69101225 T DK 451706 T US 5298615 A	20-12-1991 15-03-1994 07-10-1991 31-03-1994 14-07-1994 28-03-1994 29-03-1994
US 4154676	A	15-05-1979	GB 1387265 A AU 469879 B AU 4475572 A BE 786602 A CA 975358 A CH 606117 A DE 2235902 A ES 405084 A FR 2147139 A IE 36584 B IL 39934 A IT 963295 B JP 48048583 A JP 53015470 B NL 7210142 A,B, NO 137755 B SE 408271 B US 3905954 A ZA 7205059 A	12-03-1975 26-02-1976 24-01-1974 16-11-1972 30-09-1975 13-10-1978 01-02-1973 01-07-1975 09-03-1973 08-12-1976 31-03-1976 10-01-1974 10-07-1973 25-05-1978 25-01-1973 09-01-1978 05-06-1979 16-09-1975 25-04-1973
US 4332916	A	01-06-1982	NONE	
GB 1226448	A	31-03-1971	BE 736062 A DE 1935984 A FR 2012985 A NL 6910646 A US 3573277 A	16-12-1969 22-01-1970 27-03-1970 19-01-1970 30-03-1971
US 5162404	A	10-11-1992	US 5002984 A AU 635302 B AU 6103490 A CA 2023387 A JP 3185024 A US 5096946 A US 5169883 A US 5064540 A	26-03-1991 18-03-1993 21-02-1991 19-02-1991 13-08-1991 17-03-1992 08-12-1992 12-11-1991
JP 2149341	A	07-06-1990	JP 1943236 C JP 6067472 B	23-06-1995 31-08-1994

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

GB 99/03290

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 61226059 A	07-10-1986	JP 1026709 B JP 1540133 C	25-05-1989 31-01-1990
GB 914421 A		NONE	
EP 837091 A	22-04-1998	AU 2407397 A CA 2224879 A WO 9741169 A	19-11-1997 06-11-1997 06-11-1997

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 99/03290

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IPC 7 B01J20/28 B01J20/32

According to International Patent Classification (IPC) or to both national classification and IPC

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Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B01J

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X	EP 0 451 706 A (SAKAI ENGINEERING) 16 October 1991 (1991-10-16) page 4, line 17 page 5, line 9 - line 11 ---	1,4,5

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☒ Further documents are listed in the continuation of box C.

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"&" document member of the same patent family

Date of the actual completion of the international search

26 November 1999

Date of mailing of the international search report

08/12/1999

Name and mailing address of the ISA

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Fax: (+31-70) 340-3016

Authorized officer

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 99/03290

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
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X	GB 1 226 448 A (TASMAN VACCINE LAB.) 31 March 1971 (1971-03-31) cited in the application page 1, line 82 page 3; claim 1; example 6 ---	1,4,5,10
X	US 5 162 404 A (RAINER NORMAN B) 10 November 1992 (1992-11-10) claim 1 ---	1,4,5,8
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A	DATABASE WPI Section Ch, Week 198646 Derwent Publications Ltd., London, GB; Class A96, AN 1986-303144 XP002123921 & JP 61 226059 A (AGENCY OF IND SCI & abstract ---	1,4,5
A	GB 914 421 A (SPONCEL LIMITED) page 2, line 7 - line 8 ---	1,4-7
A	EP 0 837 091 A (YAMAGUCHI) 22 April 1998 (1998-04-22) claim 1 -----	1-5

INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/GB 99/03290

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9117830 A	28-11-1991	DE 69113266 D	26-10-1995
		DE 69113266 T	24-10-1996
		DK 530258 T	05-02-1996
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		US 3905954 A	25-04-1973
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		FR 2012985 A	27-03-1970
		NL 6910646 A	19-01-1970
		US 3573277 A	30-03-1971
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		AU 635302 B	18-03-1993
		AU 6103490 A	21-02-1991
		CA 2023387 A	19-02-1991
		JP 3185024 A	13-08-1991
		US 5096946 A	17-03-1992
		US 5169883 A	08-12-1992
		US 5064540 A	12-11-1991
JP 2149341 A	07-06-1990	JP 1943236 C	23-06-1995
		JP 6067472 B	31-08-1994

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB 99/03290

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 61226059 A	07-10-1986	JP 1026709 B JP 1540133 C	25-05-1989 31-01-1990
GB 914421 A		NONE	
EP 837091 A	22-04-1998	AU 2407397 A CA 2224879 A WO 9741169 A	19-11-1997 06-11-1997 06-11-1997

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WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : B01J 20/28, 20/32	A1	(11) International Publication Number: WO 00/20114 (43) International Publication Date: 13 April 2000 (13.04.00)
(21) International Application Number: PCT/GB99/03290 (22) International Filing Date: 5 October 1999 (05.10.99) (30) Priority Data: 9821783.9 6 October 1998 (06.10.98) GB (71) Applicant (for all designated States except US): BIOPRO- CESSING LTD. [GB/GB]; Unit 31, No. 1 Industrial Estate, Medomsley Road, Consett, Co. Durham DH8 6SZ (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): ANGUS, Katherine, Louise [GB/GB]; Bioprocessing Ltd., Unit 31, No. 1 Indus- trial Estate, Medomsley Road, Consett, Co. Durham DH8 6SZ (GB). HUTTON, David, Alan [GB/GB]; Bioprocessing Ltd., Unit 31, No. 1 Industrial Estate, Medomsley Road, Consett, Co. Durham DH8 6SZ (GB). NOEL, Robert, John [GB/GB]; Bioprocessing Ltd., Unit 31, No. 1 Industrial Estate, Medomsley Road, Consett, Co. Durham DH8 6SZ (GB). TAYLOR, Linda [GB/GB]; Bioprocessing Ltd., Unit 31, No. 1 Industrial Estate, Medomsley Road, Consett, Co. Durham DH8 6SZ (GB). (74) Agent: GILL JENNINGS & EVERY; Broadgate House, 7 Eldon Street, London EC2M 7LH (GB).	(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>	
(54) Title: ADSORBENT MEDIUM AND ITS USE IN PURIFYING DNA (57) Abstract An adsorbent medium comprises particles of a cellulosic sponge material carrying functional groups. This medium is especially useful for purifying DNA in an aqueous sample.		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

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AT	Austria	FR	France	LV	Latvia	SZ	Swaziland
AU	Australia	GA	Gabon	MC	Monaco	TD	Chad
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BB	Barbados	GH	Ghana	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
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CA	Canada	IT	Italy	NL	Netherlands	VN	Viet Nam
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CU	Cuba	LC	Saint Lucia	SD	Sudan		
CZ	Czech Republic	LI	Liechtenstein	SE	Sweden		
DE	Germany	LK	Sri Lanka	SG	Singapore		
DK	Denmark	LR	Liberia				
EE	Estonia						

INTERNATIONAL COOPERATION TREATY

PCT

REC'D 29 JAN 2001

WIPO

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference REPO5851WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/03290	International filing date (day/month/year) 05/10/1999	Priority date (day/month/year) 06/10/1998
International Patent Classification (IPC) or national classification and IPC B01J20/28		
Applicant BIOPROCESSING LTD. et al.		


1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 10/04/2000	Date of completion of this report 25.01.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Borello, E Telephone No. +49 89 2399 7378



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/03290

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*:

Description, pages:

1-6 as originally filed

Claims, No.:

1-11 as originally filed

12 as received on 16/11/2000 with letter of 15/11/2000

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/03290

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	3,8,12
	No:	Claims	1,2,4,5,6,7,9-11
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-12
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/03290

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

- D1: US4332916A (B.P. THILL) 1.June.1982
- D2: WO9411103A (WILLIAMS) 26.May.1994
- D3: US4154676A (D.T. JONES) 15.May.1979
- D5: WO9117830 A (BIO ISOLATES LTD) 28.November.1991 cited in the application
- D6: US5162404A (RAINER NORMAN B) 10.November.1992

2. Novelty

2a. The document D1 discloses an ion exchange adsorbent **medium**, prepared from cellulose sponge. The medium is chemically linked with a cross-linkable polymer (cf. D1: column 1 lines 52-56, claim 1). The medium is chopped in particles for the use in a packed adsorption column (cf. D1: column 2 lines 27-31). The medium can be used free of any fibrous reinforcement. (cf. D1: column 1 lines 56-61).

Since the technical features of the claimed adsorbent medium **do not distinguish** it from the adsorbent medium already disclosed in the prior art D1, the subject-matter of independent claim 1 lacks novelty in terms of Articles 33(1)-(2)PCT.

This applies also to dependent claims 2, 4, 5, and 10

2b. D3 discloses an ion exchange adsorption **process** using ion exchange adsorption **mediums** made by cellulose (cf. D3: column 1 line 66-column 2 line 5). The ion exchange cellulose disclosed in D3 may be in the physical form of a sponge (cf. D3: column 4 lines 22-24, Example 1), may be used in particulate form, such as beads or granules (cf. D3: column 4 lines 25-27), may be cross-linked (cf. D3:

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column 3 lines 13-15, Example 1), may be used without fibrous reinforced (cf. D3: column 4 lines 8-9) and the functional groups may be DEAE (cf. D3: Example 1). D3 describes the application of the adsorbent medium to retain the DNA (cf. D3: column 2 lines 17-26, particularly line 24).

Since the technical features of the claimed adsorbent medium and the claimed method for purifying DNA **do not distinguish** them from the adsorbent medium and method already disclosed in the prior art D3, the subject-matter of independent claims 1 and 11 lacks novelty in terms of Articles 33(1)-(2)PCT.

This applies also to dependent claims 2, 4-7, 9, 10.

- 2c. D5 discloses an ion exchange **process** using ion exchange **materials** made by cellulose sponge (cf. D5: abstract). The ion exchange cellulose sponge can be reduced to a powder (cf. D5: page 13 lines 11-13), may be cross-linked (cf. D5: page 7 lines 29-32) and may be derivatised with the diethylaminoethyl group (cf. D5 page 9 lines 19-21). The functional groups make the adsorbent suitable for retaining high molecular compounds.

Since the technical features of the claimed adsorbent medium do not distinguish it from the adsorbent medium already disclosed in D5, the subject-matter of independent claim 1 lacks novelty in terms of Articles 33(1)-(2)PCT.

... seems to be given by the DEAE functional groups: therefore claim 6 lacks implicitly novelty (Art. 33(1)-(2).)

3 Inventive step

The comparative tests, made with different adsorbent materials provided by the applicant with letter dated 15.11.2000 cannot be used to assess inventive step: the feature "spiked outer surface", which characterise the outer surface of the particles and is responsible for the results, does not find a basis either in the subject-matter of the claims or in the description as originally filed and cannot be derived therefrom either.

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- 3a. The subject-matter of claim 3 is not explicitly mentioned in the available prior art. However, according to the description (cf. page 3 lines 9-13 of the present application), this value of the water retention is merely due to the elimination of the fibrous mesh reinforcement: thus any cellulose sponge, which is not reinforced with fibrous means, like mesh or flax, should implicitly show a high(er) water retention value.

Furthermore, even if the "water retention value" specified in claim 3 would be regarded as a new technical feature, it can only be regarded as inventive, if the use of the material having such a property presents unexpected effects or properties in relation to other values. However, no such effects or properties are indicated in the application. Hence, no inventive step is present in the subject-matter of claim 3 (Art. 33(3)PCT) in view of D1, D3 or D5.

- 3b. The subject-matter of the dependent claim 8 is concerned with the dimensions of the ion exchange medium, which make it more suitable for the adsorption process and packing in the column. In view of D3, which is considered to be the closed prior art, the objective technical problem can be formulated as how to modify the ion exchange cellulose material to achieve the effect of a better flow in the adsorption/purification process.

However, the solution of claim 8 has already been proposed for similar adsorbent materials, where a crosslinked naturally-occurring polymer like agarose or cellulose (cf. D2: page 3 lines 6-14) is derivatised with DEAE functional groups,

... nucleic acids (cf. D2: page 2 lines 7-13, page 7 lines 21-30, page 9 lines 7-10, fig. 1).

It would be obvious to the person skilled in the art, namely when the same result is to be achieved, to apply this feature (= particles of 0,5 mm or more) with corresponding effect (= improve the adsorption/retaining process) to an ion exchange cellulose sponge according to document D3, thereby arriving at an ion exchange cellulose sponge according to claim 8.

Also prior art document D6 (cf. D6: claim 1) anticipates the dimensions of the cellulosic sponge particles in the range of 5 mm and above.

Therefore the subject-matter of claim 8 appears to be obvious and does not

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involve an inventive step (Article 33(3)PCT) in view of the combined disclosures of D3 and D2 and D6.

- 3c. The subject-matter of dependent claim 12 is concerned with the size distribution of the ion exchange medium particles, which makes it more suitable for the adsorption process.

The description of the present application mentions that the size of the medium particles may be either heterogeneous (page 3 line 25), or homogenised (page 5 lines 22-28). Both alternatives are presented as **equivalents** to achieve the desired effect. The limitation/selection to one of the equivalent alternatives may not be considered inventive: the skilled person may select one alternative without applying inventive activity, once he knows the problem to be solved

Therefore the subject-matter of claim 12 is not meeting the requirements set forth in Art. 33(3)PCT.

Re Item VII

Certain defects in the international application

1. The meaning of the term "HVFM" is not clear. It should be explained with the terms the letters stand for.

3. At page 6 lines 21-29 the comparative results shall be presented in the units according to the Rule 10.1PCT.